

WHAT IS CLAIMED IS:

1. A burn-in oven having a heat control system comprising an oven chamber, at least one burn-in board supporting a plurality of devices under test, a fan board spaced from the burn-in board and overlying the devices under test, a separate fan outlet opening through the fan board overlying each device under test, a separate controllable fan for providing a flow of air through each opening onto a device under test, a sealing plate at one end of a space between the burn-in board carrying the device under test and the overlying fan board, and at least one end of the space having an adjustable damper movable to adjust the size of the opening to the space at the at least one end, and a source of cooling air at one end of the oven chamber, and an exhaust for the cooling air at an opposite end whereby a flow of air is passed across the upper surface of the fan board, and selectively through the space when the damper is opened.
2. The burn-in oven of claim 1, including a controller for controlling the opening of the damper in response to a selected parameter.
3. The burn-in oven of claim 1, wherein each device under test comprises a socket, holding a device under test, a heater on the socket to heat the device under test, a temperature sensor associated

with each socket to provide a temperature signal indicating the temperature of the device under test, and a controller for controlling the fan at the fan outlet and the heater for each such device under test.

4. The burn-in oven of claim 1, wherein said separate fans each have a fan housing, a separate electric motor driving each fan in each housing, and the housings having an inlet opening for permitting air to be driven by the fan through the fan outlet onto an aligned device under test.

5. The burn-in oven of claim 1, wherein each device under test comprises a socket, an integrated circuit in the socket, and said socket having heat radiating fins thereon facing toward the fan opening.

6. The burn-in oven of claim 1, wherein said source of cooling air comprises a plenum chamber at the one end of said oven chamber, a fan providing an airflow to the plenum chamber, and the fan receiving a return airflow from the oven chamber.

7. The burn-in oven of claim 1, wherein there are a plurality of oven chambers, and each of the chambers has at least one burn-in board supporting a plurality of devices under test, and a separate fan board spaced from each burn-in board.

8. The burn-in oven of claim 5, wherein each socket has a heater therein, a separate controller for controlling the fan and heater for each socket individually, each said fan and heater being controllable by its associated controller to maintain the temperature sensed by the temperature sensor at a desired range.

9. The burn-in oven of claim 1, wherein the one end of said oven chamber has a heat exchanger for cooling air passing therethrough, said cooling air passing through the heat exchanger before entering the space.

10. The burn-in oven of claim 1, wherein there are a series of vertically stacked burn-in boards in the oven chamber, each with an associated fan board spaced from the burn-in board on a side of the burn-in boards toward the devices under test, and wherein each burn-in board forms a duct in combination with an underlying fan board that is associated with a burn-in board on an opposite side of the fan board from the duct, the cooling air cooling the surface of the burn-in board facing the underlying the fan board.

11. The burn-in oven of claim 10, wherein there are a series of oven chambers side-by-side, and a

heat exchanger between each of the adjacent oven chambers, the airflow from one oven chamber passing to one other oven chamber and through the heat exchanger between the one chamber and the other chamber.

12. In combination, a burn-in oven, and a plurality of first and second trays in the oven, combined with a cooling air flow source, the burn-in oven defining a compartment, a plurality of first trays forming burn-in boards having devices under test mounted thereon in a preselected array; a plurality of second trays comprising fan trays spaced from each of the burn-in board trays on a side of each burn-in board tray so that the fan trays overlie the devices under test and form a laterally extending space between such trays, an airflow duct formed on a side of each fan tray by an overlying burn-in board tray, the ducts extending laterally across a surface of each fan tray, a plurality of controllable fans mounted on each fan tray and having a fan opening substantially directly overlying each underlying device under test on an associated burn-in board tray, the space between each burn-in board tray and its associated overlying fan tray being adjustably operable, a source of fluid flow on one lateral side of the ducts formed by the fan tray and an overlying burn-in board tray, a controlled size opening from the source of fluid to the space and a controller for

selectively controlling the operation of each fan as a function of a temperature signal provided from each of the devices under test.

13. The combination of claim 12 and at least one adjustable damper for adjustably opening each respective space between the burn-in trays and its overlying fan tray, the controller adjusting the position of the damper to provide a substantially constant bleed air flow through the associated space.

14. The combination of claim 13, wherein said devices under test comprise sockets supporting an integrated circuit under test, a finned heat exchanger on the socket, said finned heat exchanger extending into the space between each burn-in board tray and its associated overlying fan tray.

15. The combination of claim 13, including a heat exchanger for cooling air flow entering the ducts on one end of the burn-in oven.

16. The combination of claim 12, wherein said burn-in oven has a blower for providing the flow of cooling air to an inlet end of said ducts formed with said burn-in board trays and the fan trays, and a flow passageway carrying air from said blower to the inlet end to provide cooling air to each of the ducts.

17. The combination of claim 14 and individual heaters for heating each of the devices under test, said controller receiving a temperature signal from the respective device under test, and controlling its associated fan and heater to maintain the temperature sensed at a desired range.